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A Fountain *Very* Exhaustible: The Pollution and Restoration of Lake Michigan

by Bryan Mundt

(English 1102)

On August 2, 1885, torrential rains fell on the city of Chicago. In just 24 hours, over six inches of rain fell upon the city. Sewers backed up, basements flooded and gravel paved Lake Shore Drive was washed away (Cahan and Williams 12). But the citizens and officials of the early city were not distraught at the flooding or the damage it caused, instead they were elated that the dusty, slimy and filthy city had, in essence, been given a bath. The superintendent of sewers boasted that “public health will be vastly improved” now that the city’s 420 miles of sewers, including the cesspool that was the Chicago river, were “purged of all the filth” and swept out to Lake Michigan (Platt 363). Even the *Chicago Daily News* reported that Chicago was probably the cleanest city on the continent (Cahan and Williams 12). Yet during all the jubilation that followed the flood, Commissioner of Public Works and the man in charge of Chicago’s Water management, DeWitt Clinton Cregier, assured concerned residents that the mass of sludge, oil and sewage posed no threat to the city’s drinking water supply, even though this mass was drifting its way toward the water intake crib, located two miles offshore (Platt 365). The mentality of city officials after the flood of 1885 has continued to echo since that day in regards to pollution of Lake Michigan, as well as the entire Great Lakes region. The Great Lakes account for approximately 20% of the world’s surface freshwater, and 95% of North America’s. Even though they are located, geographically, in the north-eastern part of the United States, one in 10 U.S. residents depend on them for their drinking water (Maeda 70). This essay will argue that there is no acceptable level of pollution to Lake Michigan and that restoration efforts need to be ongoing and sustained in order to reverse over one hundred years of damage caused by careless pollution into one of the largest bodies of fresh water in the world.

Even though Native Americans inhabited the area we call Chicago for centuries before, history gives credit for its origins to Louis Jolliet and Jacques Marquette. In 1673, while paddling upstream on the Mississippi River, Jolliet and Marquette came to the mouth of the Illinois River. It was there they discovered the fertile soil of the prairies as well as the abundant wood and wildlife. As they continued their diagonal trek upstream on the Illinois River and then to the Des Plaines River, they had to slide their canoes through a swampy, wet grassland called Mud Lake. This portage was often used by the Native Americans as a shortcut to Lake Michigan and it was here Jolliet first felt the need to alter the land that took nature thousands of years to produce. He wrote “all that needs to be done is to dig a canal through half a league of prairie from the lower end of Lake Michigan to the river of St. Louis (the Illinois River)” (Cahan and Williams 15). However, Jolliet was mistaken when he thought a canal would only need to be less than two miles long, as during low water periods of the year, one would have had to carry a boat five or 10 miles. Instead it was later determined that a canal ninety-six miles in length would need to be constructed, connecting the South Branch of the Chicago River to a prairie outpost on the Illinois River called LaSalle. The I&M canal was completed in 1848 and was an instant commercial success. It was one of the main contributors to the growth of Chicago, causing the city’s population to skyrocket from less than five thousand in 1840 to one million in 1890 (Cahan and Williams 16). It was due to this population growth, however, that led to the first real pollution of Lake Michigan.

Early citizens received their drinking water from private wells on their own properties; however, these wells soon became contaminated with dishwater, garbage, privy waste, even underground clay which eventually led to outbreaks of cholera and typhoid (Cahan and Williams 17).

Around the 1850's, the city started drawing its water from the abundant, near pure drinking water of Lake Michigan. At first water was drawn directly from the lake shore via cast iron pipes and stored in huge reservoirs across the city's three main sections. But soon enough, the lake water started tasting bad due to the run-off from the South Side stockyards and Northside distilleries that were dumping their waste directly into the Chicago River which emptied into the lake (Cahan and Williams 17). The south branch of the river took on its own name, "Bubbly Creek," due to the physical bubbling and churning of the waters from the waste decomposing in it. Journalist and novelist Upton Sinclair, who was gathering information about the Chicago Stockyards, described the scene,

It is constantly in motion as if huge fish were feeding in it or great leviathans disporting themselves in its depths... Here and there the grease and filth have caked solid, and the creek looks like a bed of lava; chickens walk about on it, feeding... The packers used to leave the creek that way, till every now and then the surface would catch on fire and burn furiously" (qtd. in Brett 42).

Desperate to remedy the drinking water issue, and faced with a cholera epidemic, the city hired engineer Ellis Sylvester Chesbrough to find a solution. Chesbrough's first design did nothing to improve the pollution pouring into the lake. While raising the city streets ten feet to accommodate a new network of sewers kept the garbage out of the streets, the new sewers still led to the same place, the Chicago River (Cahan and Williams 17). Chesbrough's next plan entailed locating the water intake crib two miles off shore, then connecting it to the city's waterworks via a tunnel that was built under the lake bed. "Two-Mile Crib" was completed on March 25, 1867 to much fanfare. The city, it seemed, had an endless supply of pure drinking water available to them. The editor of the *Chicago Times*, Wilbur F. Storey even wrote, "We have the purest water in the world... We have tapped the lake at a point where exists only ever-lasting purity" (Platt 136-137). However, the growing concern over the toxicity of the Chicago River and its pollution of the lake reached a head after the flood of 1885 with proof that the water being collected at Two-Mile crib was compromised by the sewage that was swept from the city just two days prior. Chesbrough devised a new solution to the city's sewage problem; he proposed building a new canal 28 miles in length, connecting the Chicago River with the Des Plaines River in Lockport, Illinois (Brett 42). This new canal, named the Chicago Sanitary and Ship Canal was completed on January 2, 1900. The massive new channel was able to permanently reverse the flow of the Chicago River by pulling in massive amounts of lake water, and flushing the filth downstream (Brett 43). However, a hundred years later and partially due to climate change, the river is at risk of reversing its course once again and flowing back into Lake Michigan. Normally the river sits approximately six inches below the lake, allowing the lake water to flow into the river, but in 2013 after 320 days without at least one inch of snow, coupled with a hot and dry summer, water levels in the lake were at the lowest in history and almost equalized with the river (Bailey). If this trend continues, and the river reverses course, the city will have develop a new plan to deal with the, still polluted, Chicago River. Short term options include limiting boat traffic traveling to and from the lake, thereby limiting the amount of time the locks separating the two bodies of water sit open (Bailey).

While the Chicago River historically was a major cause of pollution to lake, and still has the potential to be, other pollutants continue to be dumped by several other industries. In 1953, the S.S. Badger ferry entered service, primarily to transport railroad freight cars across Lake Michigan between Manitowoc, Wisconsin, and Ludington, Michigan (Hawthorne, "Badger"). The Badger is the last coal-powered steamship on the Great Lakes, and during a single sailing, season it dumps approximately 509 tons of coal ash directly into the lake. The ash is concentrated with arsenic, lead, mercury and other heavy metals (Hawthorne, "Badger"). To make matters worse, the company that operates the ferry service, Lake Michigan Carferry Service, was granted an exception to the Clean

Water Act, which allows the continued dumping of coal ash into the lake through the 2014 sailing season. The company originally sought an exception to the Act by attempting to register the ship as a National Historic Landmark, thereby allowing the ship to continue polluting the lake indefinitely (Hawthorne, “Badger”). The ship’s operator states they are outfitting the engines with equipment to store the coal ash onboard. The upgrades should be completed by the start of the 2015 sailing season (April 2014 Press Release: S.S Badger).

The London company, British Petroleum (BP), has also been a longtime polluter of Lake Michigan. BP operates an oil refinery on the lake shore in Whiting, Indiana, and a mere 8 miles southeast of Chicago’s 68th Street water intake crib. In July 2007, the Indiana Department of Environmental Management granted a permit exempting BP from a 1995 federal regulation limiting the amount of mercury discharged into the Great Lakes to 1.3 ounces per year. BP reported that it released approximately three pounds of mercury into Lake Michigan each year between 2002 and 2005 (Carmichael). The company argued that it required the permit in connection to its \$3.8 billion expansion to the refinery and Indiana officials backed them up, stating that the amount of mercury BP was releasing was “minor” (Carmichael). Unfortunately, mercury is a neurotoxin that is absorbed by fish and can be harmful if eaten in sufficient quantities. Even more recently, BP spilled over 1,600 gallons of crude oil into the lake from the same Indiana refinery. On March 24, 2014, workers noticed an oil sheen on the water and traced the spill to a distillation unit that processes heavy Canadian oil from the tar sands region of Alberta (Hawthorn, “BP”). Even though the U.S. Environmental Protection Agency said that the spill most likely poses no long-term risks to Lake Michigan, it raises serious questions about the safety of this refinery as well as other industries on the lake. We will now look at past and present efforts that have been put forth in order to not only limit the pollution of the Great Lakes, but to help restore the damage that has already been done.

With the Great Lakes being the sheer size they are, the argument is often made that the amount of toxic chemicals being released is minimal. However, many of these chemicals and substances build up over time in the sediment beds of the lakes. This accumulation coupled with the fact that the Great Lakes only have a single outlet, the St. Lawrence River, means that the lakes are “like a giant bathtub with a really, really slow drain and a dripping faucet, so the toxics build up over time,” said Emily Green, director of the Great Lakes program of the Sierra Club (qtd. in Carmichael). In an effort to have oversight and authority over the Great Lakes, the governments of the United States and Britain created the International Joint Commission in 1909 (Sproule-Jones 37-38). Except for some studies on pollution levels and minor recommendations on sewage treatment in the early 1900’s, the first major restoration efforts began with the Great Lakes Water Quality Agreements of 1972 and 1978. The agreements would work to limit the amount of excess nutrient loadings and control of toxic substances, respectively (Sproule-Jones 39-41). The U.S. federal government has initiated its own acts, such as the Safe Drinking Water Act, which regulates 83 potential water contaminants, and more recently, the Obama administration announced the Great Lakes Restoration Initiative in February 2009 (Landers 26). One of the main focuses of the initiative is to reduce the amount of mercury and pharmaceutical products entering the lakes due improper disposal of electronics, medicines, and household hazardous waste. Contaminated sediments in 31 “areas-of-concerns” are also slated to be cleaned up as part of the restoration efforts (Landers 27). Heavy metals and chemicals in sediments are consumed by micro-organisms, which are consumed by the smallest minnows, which are then in turn consumed by larger and larger fish. These pollutants are not metabolized by the organisms and build up over time. This is why each of the eight Great Lake states warns residents to avoid eating certain types of larger, longer lived fish (Carmichael). If successful, efforts and regulations such as these will continue to make a positive impact on the health and restoration of the Great Lakes.

As so often has occurred throughout history, it is human nature to be narrow sighted on the impacts we make to this planet. As a young, growing city, Chicago was naive to believe that the great

inland sea in its backyard was “a fountain inexhaustible” (Platt 135), and when they did realize their fallacies, they merely devised new ways to sweep away the filth, instead of developing ways to prevent it in the first place. With each new generation, every new business venture, new exceptions are made to regulations that were developed to restore Great Lakes to the ecological splendor that they once were. Greater accountability and enforcement of current rules and regulations need to continue. I believe we are at a turning point however; more so now than ever, the human race is realizing the fragility of the planet we call home. We are starting to realize the consequences of our actions and we are taking steps to limit the impact of the footprint we leave. Lisa P. Jackson, administrator of the U.S. Environmental Protection Agency, said in 2010, “We’re committed to creating a new standard of care that will leave the Great Lakes better for the next generation” (quoted in Landers 26). I believe this to be a great piece of advice and guidance; if each one of us makes this world just a little better for the next generation, the tides will change and hopefully the environment can start to heal.

Works Cited

- April 2014 Press Release: S.S Badger*. April 2014. Web. 2014 1 May.
- Bailey, Marissa. *Continuing Drought Could Lead to Reversal of Chicago River Flow*. 9 January 2013. Web. 1 May 2014.
- Brett, Hansen. “The Reversal of The Chicago River: Flushing the System.” *Civil Engineering* 79.12 (2009): 40-43. *Academic Search Complete*. Web. 21 April 2014.
- Cahan, Richard and Michael Williams. *The Lost Panoramas: When Chicago Changed Its River and the Land Beyond*. Chicago: CityFiles Press, 2011. Print.
- Carmichael, Bobby. “BP gets OK to dump mercury into lake.” *USA Today* 31 July 2007. *Academic Search Complete*. Web. 21 April 2014.
- Hawthorn, Michael. “BP Raises Estimate of Lake Michigan Oil Spill.” *Chicago Tribune* 28 March 2014. Web. 1 May 2014.
- Hawthorne, Michael. “Badger Ferry Gets 2-year Reprieve from Pollution Rules.” *Chicago Tribune* 22 March 2013. Web. 1 May 2013.
- Landers, Jay. “Federal ‘Action Plan’ Sets Ambitious Goals For Great Lakes Restoration.” *Civil Engineering* 80.4 (2010): 26-29. *Academic Search Complete*. Web. 21 April 2014.
- Maeda, Deborah. *Troubled Waters: Asian Carp and the Great Lakes*. New York: Nova Science Publishers, 2011. Print.
- Platt, Harold. *Shock Cities: The Environmental Transformation and Reform of Manchester and Chicago*. Chicago: The University of Chicago Press, 2005. Print.
- Sproule-Jones, Mark. *Restoration of the Great Lakes: Promises, Practices, Performances*. East Lansing: Michigan State University Press, 2002. Print.